IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): An X-ray diagnostic system comprising:

an X-ray source irradiating an X-ray;

an X-ray detector detecting the X-ray;

a support apparatus configured to support both the X-ray source and the X-ray detector so that both the X-ray source and the X-ray detector are opposed to each other with a space left therebetween, a tabletop on which an object to be examined is laid being located in the space, the object being subjected to injection of an X-ray contrast agent when the object is examined;

a fluoroscopic scan unit configured to relatively move one of the tabletop and the support apparatus with respect to the other and to perform a fluoroscopic scan along a direction predetermined with respect to the object with the one of the tabletop and the support apparatus relatively moved with respect to the other, the X-ray contrast agent flowing substantially along the direction, thereby a fluoroscopic image of the object being provided along the direction;

an imaging parameter setting unit configured to set, at every region to be examined of the object, imaging parameters required for an imaging scan on the basis of the fluoroscopic image, the regions being at least continuous without a gap along the direction determined with respect to the object, the imaging parameter setting unit comprising means for setting, as one of the imaging parameters, a relative moving speed of the one of the tabletop and the support apparatus with respect to the other depending on a speed of the X-ray contrast agent flowing in the object, including means for producing a difference image of two images of said object containing said X-ray contrast agent at two different positions in said object and

determining an amount of movement of said X-ray contrast agent using said difference image; and

an imaging scan unit configured to relatively move the one of the tabletop and the support apparatus with respect to the other and, with the one of the tabletop and the support apparatus relatively moved with respect to the other, perform the imaging scan on the object according to the imaging parameters set by the imaging parameter setting unit, the imaging scan unit including means for controlling a radiation field of the X-ray on the object in the direction depending upon the moving speed and the imaging parameters.

Claim 2 (Previously Presented): An X-ray diagnostic system according to claim 1, wherein the imaging parameter setting unit is configured to accept information inputted by an operator's manual operation and to set the imaging parameters in response to the operator's manually operated information.

Claims 3-4 (Cancelled).

Claim 5 (Previously Presented): An X-ray diagnostic system according to claim 1, wherein the imaging parameter setting unit comprises means for setting, as one of the imaging parameters, a frame rate required for the imaging scan depending on a speed of the X-ray contrast agent flowing in the object, wherein

the radiation field controlling means is configured to control the radiation field in dependence upon the frame rate.

Claim 6 (Previously Presented): An X-ray diagnostic system according to claim 1, further comprising a region specifying unit configured to specify a specific region of the object, wherein

the radiation field controlling means comprises means for controlling the radiation field to an opening appropriate for imaging of the specific region in response to an arrival of a position of the imaging scan at the specific region.

Claim 7 (Original): An X-ray diagnostic system according to claim 1, wherein the imaging parameter setting unit is configured to, from the fluoroscopic image obtained by the fluoroscopic scan unit, automatically recognize the region through which the X-ray contrast agent flows and to set the imaging parameters based on a recognized result of the automatic recognition.

Claim 8 (Original): An X-ray diagnostic system according to claim 7, wherein the imaging parameter setting unit comprises means for automatically calculating, using a pattern recognition technique, the X-ray-contrast-agent flowing regions from the fluoroscopic image and means for setting, as part of the imaging parameters, region by region, an X-ray collimating opening depending on the X-ray-contrast-agent flowing regions based on a calculated result of the calculating means,

wherein the imaging scan unit comprises means for controlling an X-ray collimator in compliance with the X-ray collimating opening.

Claim 9 (Previously Presented): An X-ray diagnostic system according to claim 7, wherein the imaging parameter setting unit comprises means for automatically calculating, using a pattern recognition technique, the X-ray-contrast-agent flowing regions from the

fluoroscopic image and means for setting, as part of the imaging parameters, region by region, a relative moving speed of one of the tabletop and the support apparatus with respect to the other depending on a flowing speed of the X-ray contrast agent based on a calculated result of the calculating means,

wherein the imaging scan unit comprises means for controlling the relative speed of the one of the tabletop and the support apparatus with respect to the other.

Claim 10 (Previously Presented): An X-ray diagnostic system according to claim 7, wherein the imaging parameter setting unit comprises means for automatically calculating, using a pattern recognition technique, the X-ray-contrast-agent flowing regions from the fluoroscopic image and means for setting, as part of the imaging parameters, region by region, an X-ray collimating opening and a relative moving speed of one of the tabletop and the support apparatus with respect to the other depending on a flowing speed of the X-ray contrast agent based on a calculated result of the calculating means,

wherein the imaging scan unit comprises means for controlling an X-ray collimator in compliance with the X-ray collimating opening and means for controlling the relative speed of the one of the tabletop and the support apparatus with respect to the other.

Claim 11 (Original): An X-ray diagnostic system according to claim 7, further comprising:

a calculation unit configured to automatically calculate, using a pattern recognition technique, the X-ray-contrast-agent flowing regions from the fluoroscopic image obtained by the fluoroscopic scan unit; and

a control unit configured to automatically and in real time control a radiation field of the X-ray onto the object on the basis of a calculated result of the calculation unit, the X-ray

being radiated from the X-ray source during acquisition of the fluoroscopic image provided by the fluoroscopic scan unit.

Claim 12 (Previously Presented): A method of X-ray imaging performed by an X-ray diagnostic system comprising an X-ray source irradiating an X-ray; an X-ray detector detecting the X-ray; and a support apparatus configured to support both the X-ray source and the X-ray detector so that both the X-ray source and the X-ray detector are opposed to each other with a space left therebetween, a tabletop on which an object to be examined is laid being located in the space, the object being subjected to injection of an X-ray contrast agent when the object is examined,

the method comprising the steps of:

relatively moving one of the tabletop and the support apparatus with respect to the other and performing a fluoroscopic scan along a direction predetermined with respect to the object with the one of the tabletop and the support apparatus relatively moved with respect to the other, the X-ray contrast agent flowing substantially along the direction, thereby a fluoroscopic image of the object being provided along the direction;

producing a difference image of two images of said object containing said X-ray contrast agent at two different positions of said object;

determining an amount of movement of said X-ray contrast agent using said difference image;

setting, at every region to be examined of the object, imaging parameters required for an imaging scan on the basis of the fluoroscopic image, the regions being at least continuous without a gap along the direction determined with respect to the object, the imaging parameters including a relative moving speed of the one of the tabletop and the support

apparatus with respect to the other depending on a speed of the X-ray contrast agent flowing in the object; and

relatively moving the one of the tabletop and the support apparatus with respect to the other and, with the one of the tabletop and the support apparatus relatively moved with respect to the other, performing the imaging scan on the object according to the imaging parameters with controlling a radiation field of an X-ray on the object in the direction depending upon the moving speed and the imaging parameters.

Claim 13 (Previously Presented): An X-ray imaging method according to claim 12, comprising:

storing images of said object containing said contrast agent;

subtracting a first image from a second image to produce said difference image;

determining an amount of movement using said difference image;

comparing said amount of movement to a threshold value; and

determining said moving speed based upon whether said movement amount is less than or at least said threshold value.

Claim 14 (Previously Presented): An X-ray imaging method according to claim 13, comprising:

determining a first moving speed with reference to a first set of parameters when said movement amount is less than said threshold; and

determining a second moving speed with reference to a second set of parameters when said movement amount is at least said threshold.

Claim 15 (Previously Presented): An X-ray imaging method according to claim 13, comprising:

determining a first difference image;

determining a second difference image;

determining first and second positions in said first and second difference images, respectively; and

determining a moving speed using said first and second positions.

Claim 16 (Previously Presented): An X-ray imaging method according to claim 15, comprising:

determining said first position P1 at a first imaging time t1;

determining said second position P2 at a second imaging time t2; and

determining said moving speed as $\frac{P1-P2}{t1-t2}$.

Claim 17 (Previously Presented): An X-ray diagnostic system according to claim 1, wherein:

said means for producing a difference image comprises a processor and a memory;

said memory storing images of said object containing said contrast agent;

said processor being programmed to read out said images, subtract a first image from a second image to produce said difference image, determine an amount of movement using said difference image, comparing said amount of movement to a threshold value, and determining said moving speed based upon whether said movement amount is less than or at least said threshold value.

Claim 18 (Previously Presented): An X-ray diagnostic system according to claim 17, wherein said processor is programmed to determine a first moving speed with reference to a first set of parameters when said movement amount is less than said threshold, and determine a second moving speed with reference to a second set of parameters when said movement amount is at least said threshold.

Claim 19 (Currently Amended): An X-ray ~~imaging method~~ diagnostic system according to claim 17, wherein said processor is programmed to determine a first and second difference images, determine first and second positions in said first and second difference images, respectively, and determine a moving speed using said first and second positions.

Claim 20 (Currently Amended): An X-ray ~~imaging method~~ diagnostic system according to claim 18, wherein said processor is programmed to:

determine said first position P1 at a first imaging time t1;

determine said second position P2 at a second imaging time t2; and

determine said moving speed as $\frac{P1 - P2}{t1 - t2}$.